In re Application of: Bernard O. Geaghan et al.

Serial No.: 10/052,695

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Marked-up Copy of Amended Part of Specification

Paragraph that begins on page 7, line 31:

System 200 also includes power source 218 that produces a time varying signal v(t). This signal may be a sign wave, square wave, or any time varying voltage. Amplifiers 222 drive the signal to each of the corners of conductive surface 213 through wires 224. The voltage v(t) is driven from the output of each of amplifiers 222, so the entire surface of touch sensor 212 is at a uniform voltage. Current measuring devices 228 measure currents 226 that flow through the amplifier outputs. When conductive surface 213 is touched by, for example, a finger, capacitive contact is made and is represented by capacitor 230. Current flows from ground 232, through amplifiers 222, conductive surface 213, touch capacitor 230, <u>through body impedance 234 and body to ground impedance 236,</u> and from earth ground 238 through system impedance 240 ~~back to local ground 232~~. Currents measured by devices 228 are converted into digital format and processor 216 calculates a position of a touch to touch sensor 212 using ratios of the current 226 generated from a touch to touch sensor 212. Processor 216 may send position information to a CPU 242 for further processing.

Table that appears on page 10:

Table 1 Touch System with Touch Sensor and One Contact Point					
Mode	What is Powered	Circuit configuration (refer to Figure 5)		Sensor Sensitivity and Responsiveness (refer to Figure 5)	
		Switch 344 / Phase of 328 / Phase of 327	Switch 346 / Phase of 350 / Phase of 354	Touch Sensor 312	Contact Point 314
1	~~Contact Point 314~~ Touch Sensor 312	~~Open~~ Closed / ~~270°~~ 90° / ~~DC~~ 0°	~~Closed~~ Open / ~~90°~~ 270° / 0° ~~DC~~	Any Touch	Must also touch Contact Point 312
2	~~Touch Sensor 312~~ Contact Point 314	~~Closed~~ Open / ~~90°~~ 270° / 0° ~~DC~~	~~Open~~ Closed / ~~270°~~ 90° / ~~DC~~ 0°	Must also touch Contact Point 314	Any Touch
3	Touch Sensor 312 *and* Contact Point 314	Closed / 90° / 0°	Closed / 270° / 180°	Any touch; (More sensitive if Contact Point 314 is also touched)	Any touch; (More sensitive if Touch Sensor 312 is also touched)

Paragraph that begins on page 12, line 15:

When contact point 314 is touched, current 356 flows from local ground 332, through amplifier 348, contact point 314, touch capacitance 358, and through the user's body impedance 334. Current 356 may follow two separate paths after passing through body impedance 334. If the user touches only contact point 314, then current ~~340~~ 356 flows through the user's body-to-ground impedance 336, to earth ground 338, system impedance 340, and back to local ground 332. Current 356 resulting from the touch to contact point 314 is measured by current measuring device 350. This measurement is conveyed to processor 316 that is configured to detect a touch to contact

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point 314 based on the change of current 356. Processor 316 may convey this change in current to CPU 342, and CPU 342 may use this information to trigger changes in a program, change the image on a display, or give other instructions that might be required for proper use and function of touch system 300. For example, a touch to contact point 314 may indicate that one user of touch system 300, for example in a video game scenario, is ready to play the video game. In response, CPU 342 may change an indicator on the display from red to green to indicate that the user is now able to participate.

Paragraph that begins on page 12, line 30:

If the user touches contact point 314 and touch sensor 312 simultaneously, or if there are overlapping touches, a portion of current ~~340~~ 356 also flows from the user's body, through touch capacitance 330 to touch sensor 312. Current ~~340~~ 356 is distributed to amplifiers 322 based on the touch location to touch sensor 312, and then flows back to local ground 332. As current ~~340~~ 356 passes through amplifiers 322, it will be measured by current measuring devices 328, and the measurements will subsequently be conveyed to processor 316. Thus, a touch to touch sensor 312 can be detected and then the position of that touch measured, only if the user is simultaneously touching contact point 314 and touch sensor 312. It is noted, however, that a path for return of the current provided by touching contact point 314 and touch sensor 312 may increase the current being channeled through touch sensor 312. As such, the higher amount of current may increase the amount of signal being sent to processor 314 while the amount of "noise" in the system remains constant. As a result, the signal-to-noise ratio of the current measurements and the resulting position measurements may be increased.